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### ④ Mailing system.

⑤ A franking machine (20) is provided with memory (28) to store a plurality of slogans and means to select one of the slogans to be printed alongside a franking impression on a mail item. The franking machine is provided with printing means (26) to print destination addresses at the same time as printing the franking and slogan. A database (31) contains destination address records which include slogan selection signals whereby a slogan to be printed in respect of each destination address is automatically selected.

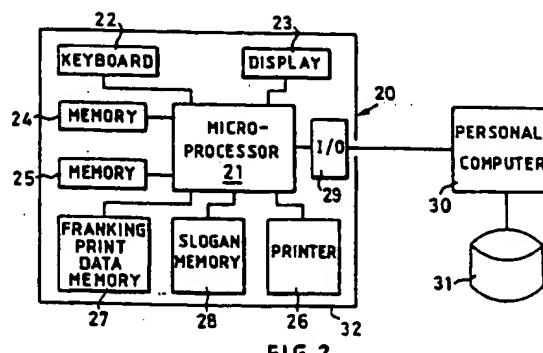


FIG.2.



## EUROPEAN SEARCH REPORT

Application Number

DOCUMENTS CONSIDERED TO BE RELEVANT			EP 93310282.4
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. CL.5)
A	<u>US - A - 4 868 757</u> (GIL) * Fig. 5,6; abstract; column 4, lines 57-65 *	1,2,5, 6	G 07 B 17/02 G 07 B 17/00
A	<u>EP - A - 0 493 948</u> (ALCATEL BUSINESS SYSTEMS) * Fig. 1; column 2, lines 35-45; column 4, lines 5-19 *	1,5,6	
A	<u>GB - A - 2 208 367</u> (ALCATEL BUSINESS SYSTEMS) * Fig. 1; abstract; page 3, line 31 - page 4, line 13 *	1,2,5, 6	
			TECHNICAL FIELDS SEARCHED (Int. CL.5)
			G 07 B
<p>The present search report has been drawn up for all claims</p>			
Place of search	Date of completion of the search	Examiner	
VIENNA	11-10-1994	DRÖSCHER	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			



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(54) Mailing system.

(57) A franking machine (20) is provided with memory (28) to store a plurality of slogans and means to select one of the slogans to be printed alongside a franking impression on a mail item. The franking machine is provided with printing means (26) to print destination addresses at the same time as printing the franking and slogan. A database (31) contains destination address records which include slogan selection signals whereby a slogan to be printed in respect of each destination address is automatically selected.

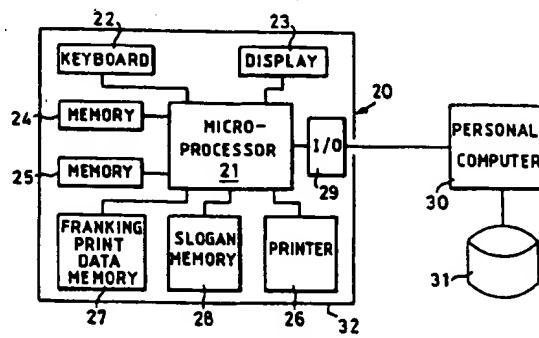


FIG.2.

This invention relates to mailing systems and in particular to mailing systems utilising postage meters for printing franking and other information on mail items.

Known franking machines include a printing device comprising a print drum carrying a print die for printing a fixed invariable part of a franking impression and settable print wheels for printing variable information consisting of the postage charge and the date. The franking machine is provided with means such as a keyboard or thumb wheels manually operable by a user to set the print wheels to print a desired value of postage charge. An electronic accounting circuit receives an input representing the postage charge to which the print wheels have been set to enable the accounting circuit to maintain accounting records relating to usage of funds in franking mail items.

In addition to the print die for printing the invariable part of the franking impression, franking machines often are provided with a further print die on the print drum to print a slogan comprising advertising or other information alongside the franking impression. The print dies carried by the drum are not readily removed or replaced and, particularly in relation to the print die for printing the franking impression where security is important, any replacement of the dies is carried out by a service engineer. Consequently it is usual for the franking machine to print the same slogan without change for long periods of time.

According to one aspect of the invention a mailing system includes a franking machine; said franking machine including printing means for printing on mail items; accounting means for carrying out accounting and control functions for maintaining accounting records relating to use of the franking machine in franking mail items; input means to input a required postage charge to the accounting means; first means for storing first print data defining an invariable part of a franking impression to be printed; second means storing a plurality of sets of second print data respectively defining a plurality of slogans to be printed; means operable to select one of said sets of second print data defining a selected one of said slogans; said accounting means being operative in a franking operation to read out from said first means said first print data and to control said printing means to print a franking impression comprising said invariable part and at least the required value of postage charge input by said input means and further being operative in the franking operation to read out the selected set of second print data defining a selected one of said plurality of slogans.

According to a second aspect of the invention a mailing system includes a franking machine; said franking machine including printing means for printing on mail items; accounting means for carrying out accounting and control functions for maintaining ac-

counting records relating to use of the franking machine in franking mail items; input means to input a required postage charge to the accounting means; first means for storing first print data defining an invariable

5 part of a franking impression to be printed; a database of records of destination addresses and corresponding destination areas; means to read out destination addresses from records having a selected one of said destination areas; said accounting means  
10 being operative in a franking operation to read out from said first means said first print data and to control said printing means to print a franking impression comprising said invariable part and at least the required value of postage charge input by said input means and further being operative in the franking operation to receive the destination addresses read out from the records of the database and to print said destination addresses on said mail items.

According to a third aspect of the invention a  
20 mailing system comprises a franking machine; said franking machine including printing means for printing on mail items; accounting means for carrying out accounting and control functions for maintaining accounting records relating to use of the franking machine in franking mail items; input means to input a required postage charge to the accounting means; first means for storing first print data defining an invariable part of a franking impression to be printed; second means storing a plurality of sets of second print data respectively defining a plurality of slogans to be printed; means operable in response to a slogan select signal to select one of said sets of second print data defining a selected one of said slogans; and a database of destination address records, each record including a destination address and an associated slogan select signal; means to read out a selected one of said destination address records and to input said destination address and slogan select signal to said franking machine; said accounting means being operative in a franking operation to read out from said first means said first print data, read out the selected set of second print data defining a selected one of said plurality of slogans and to control said printing means to print a franking impression comprising said invariable part and at least the required value of postage charge input by said input means and to print said destination address input from said database and the selected slogan.

An embodiment of the invention will now be described by way of example with reference to the drawings in which:-

50 Figure 1 illustrates an envelope printed with a franking impression and a slogan,  
55 Figure 2 is a block diagram of a mailing system including a franking machine, and  
Figure 3 is a flow chart illustrating steps of a franking operation in which a slogan is selected to be printed.

Referring first to Figure 1, a mail item consisting of an envelope 10 bears at the top thereof a franking impression 11 comprising an invariable pattern 12 which includes a licence number 13 of the franking machine and within which a variable postage amount 14 is printed and an invariable pattern 15 which includes the postal authority office to receive the mail item and within which the date 16 of franking the mail item is printed. Alongside the franking impression 11, there is printed a slogan 17. A destination address 18 is printed in a centre part of the envelope.

Referring now to Figure 2, a franking machine 20 comprises electronic circuits for carrying out accounting functions and for controlling operation of a printing device to print the franking impression, slogan and destination on the envelope.

The electronic circuit comprises a microprocessor 21, a keyboard 22 to enable input of information and control signals to the microprocessor by a user of the franking machine and a display 23 driven by the microprocessor to provide information relating to operation of the franking machine to the user. Non-volatile memories 24, 25 are provided to store accounting records relating to usage of the franking machine in franking mail items. The memories provide a descending register to store a value of credit available for use in franking, an ascending register to store an accumulated value of postage used in franking mail items, an items register to store a count of the number of items franked and a high items register to store a count of the number of items franked with a postage charge in excess of a predetermined value. In order to ensure security and integrity of the accounting data and to enable reliable restoration of the accounting data in the event of a fault occurring each of the registers is duplicated in each of the memories 24, 25. A printing device 26 is connected to the microprocessor 21 and is controlled by the microprocessor to print required information on the mail items. The printing device is a digital printing device having a plurality of selectively operable printing elements. Preferably the printing elements are disposed in a row transversely to a direction of feed of mail items such that by a succession of selective operations of the printing elements during passage of the mail item past the printing elements, the required printed impression is built up column by column along the mail item. Examples of such digital printing devices are dot impact, ink jet and thermal print heads. It is preferred to use a thermal print head and to feed a thermal transfer ink ribbon between the print head and the mail item. Upon selective operation of a thermal printing element, the area of transfer layer of the ribbon adjacent the operated printing element is heated and is thereby transferred to the surface of the mail item. Data defining the fixed invariable parts of the franking impression is stored in a franking print data memory 27.

When a franking operation is to be performed, a

user initiates (step 40, Figure 3) the franking operation and enters 41 by means of the keyboard 22 a postage charge with which an item to be franked and the microprocessor 21 carries out accounting procedures in which the required postage charge is checked (step 42) against funds stored in the descending register available for use in franking. If the check indicates that there is sufficient credit available the microprocessor proceeds with a program routine whereby the account data stored in the registers is updated (step 43) to account for the current franking operation being performed and then controls (step 44) the printer 26 to print the franking impression 11 on the envelope 10. Control (step 44) of the printer by the microprocessor includes merging of print data signals stored in the memory 27 relating to the invariable part of the franking impression with print data signals generated by the microprocessor relating to the postage charge and the date and outputting the merged print data signals to the printer to cause the printer to print the complete franking impression including the postage charge and date. When it is desired to print a slogan alongside the franking impression, print data signals defining the slogan to be printed are stored in a slogan memory 28. The microprocessor reads (step 45) print data signals from the slogan memory 28 and, after outputting the print data signals defining the franking impression to the printer, the microprocessor outputs the print data signals defining the slogan. Accordingly when a mail item is fed past the print head, the franking impression and the slogan are printed in a column-by-column manner across the upper part of the mail item.

If desired the franking machine may be provided with a print head capable of printing the destination address 18 on the mail item at the same time that the franking impression and slogan are printed on the mail item. A system using such a franking machine is disclosed in EP 0298775. Thus with such a system the printing of the franking impression, the slogan and the destination address is effected in a single pass of the mail item through the franking machine. In order to input the destination address data to the franking machine 20, an input/output port 29 connected to the microprocessor enables input of signals from a device external to the franking machine. Conveniently the external device may be a personal computer 30.

While the personal computer may be utilised to input a destination address for individual mail items as required, the personal computer may include a database 31 containing a large number of destination addresses and may be operated to output destination addresses selectively from the database and to input (step 46) the destination addresses to the franking machine so as to frank and address a plurality of items in a series of franking operations.

Preferential postal rates are offered by postal authorities to users of the postal service if the mail is sorted by postal authority destination areas prior to delivery of the mail to the postal authority. Accordingly the database comprises records which include a destination address and a postal authority destination area for each destination address. The personal computer is programmed to read out the destination addresses in batches. Destination address having the same postal authority destination area are read out in a batch. When all mail items destined for an address within a batch have been printed, an end-of-batch signal is generated by the personal computer to indicate that processing of all mail items for that batch has been completed. An operator of the system collects mail items of a batch in a postal bag and, upon receiving the end of batch, closes the bag and labels the bag with a label carrying the destination area. If desired the label may be passed through the franking machine and the printer may be caused to print the destination area on the label upon completion of a batch. After completion of a batch of mail items for a common destination area, the system continues batch by batch in respect of other destination areas until all mail items to be dispatched have been processed.

While a single slogan is sufficient for the needs of many users of franking machines, for other users it is desirable to be able to print slogans on the mail items selectively in dependence upon various events or upon the intended recipient of the mail item. Accordingly the slogan memory 28 is loaded with print data sets defining different slogans respectively. When an operator desires to frank a mail item, the operator inputs not only the desired postage charge on the keyboard but also selects (step 47) a desired one of the different slogans. The microprocessor operates under a program routine which effects read out of that one of the print data sets corresponding to the slogan selected by the operator to be printed. If desired the slogan printed may default to a predetermined one of the slogans if the operator does not select a slogan or a selected slogan may continue to be printed until such time as the operator inputs a selection of a different slogan.

When the franking and addressing of mail items is processed in dependence upon data read from the database 31 by the computer 30, the database may include data relating to selection of slogans to be printed on mail items. For example it may be desired to print slogans relating to information appropriate to only specified destination areas or to specified classes of recipient of the mail items. Slogans appropriate to a specified destination area may contain information relating to an event occurring in the area or to advertising of interest to recipients in the area. Slogans appropriate to recipients may include information relating to known business interests of the respective

recipients. Upon read out of destination data from the database, data relating to a required slogan for that recipient or destination area of the recipient is read out and input to the microprocessor of the franking machine to enable the microprocessor to read out the print data set from the slogan memory 28 corresponding to the required slogan and to cause the printer to print that slogan on the mail item.

It will be appreciated that the franking print data memory 27 and slogan memory 28 provide non-volatile storage of the data. That is to say the memories retain the data when the franking machine is powered down either by switching off or due to termination of the power supply. The franking print data is loaded into memory at the time of manufacture of the franking machine and if desired the slogan print data may also be loaded at the time of manufacture. Accordingly the memories 27 and 28 may be read only devices. However it may be desired that the stored slogan data can be changed or that data for additional slogans can be loaded into the memory 28 while the franking machine is in the field in which case the memory 28 must be of a type in which data can be written as well as read. The memories 27 and 28 are described hereinbefore and shown in Figure 2 of the drawings as separate devices. However it will be appreciated that the storage locations for the franking and slogan printing data may be implemented in a single memory device and if desired may be implemented in one or both of the non-volatile memories 24, 25.

As is well known, the accounting circuit comprising the micro-processor, keyboard, display and memories 24, 25 are housed in a secure housing 32 to prevent unauthorised access to the accounting circuit and accounting data stored therein. The printer 26 extends out of the secure housing to permit the necessary interaction between the printer and mail items for effecting printing on the mail items. The franking print memory 27 is located within the secure housing and since the data in the slogan memory also controls the printer it is preferred to locate the slogan memory 28 within the secure interior of the secure housing.

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#### Claims

1. A mailing system including a franking machine (20); said franking machine including printing means (26) for printing on mail items (10); accounting means (21) for carrying out accounting and control functions for maintaining accounting records relating to use of the franking machine in franking mail items; input means (22) to input a required postage charge to the accounting means; first means (27) for storing first print data defining an invariable part of a franking impression to be printed; characterised by second

means (28) storing a plurality of sets of second print data respectively defining a plurality of slogans to be printed; means (21) operable to select one of said sets of second print data defining a selected one of said slogans; said accounting means (21) being operative in a franking operation to read out from said first means (27) said first print data and to control said printing means (26) to print a franking impression comprising said invariable part (12, 13, 15) and at least the required value of postage charge (14) input by said input means and further being operative in the franking operation to read out the selected set of second print data defining a selected one of said plurality of slogans (17).

2. A mailing system as claimed in claim 1 wherein input means (29) is operable to input a destination address to the accounting means and wherein said accounting means (21) is operative in response to the input destination address to control the printing means (26) to print the destination address on the mail item (10).

3. A mailing system as claimed in claim 2 including a database (31) comprising a plurality of records of destination addresses, each record including a slogan selection signal to select one of the stored slogans and wherein for each mail item (10) to be franked, a destination address (18) and corresponding slogan selection signal is read out from the database (31) and input to the accounting means (21) to effect printing of the destination address (18) and the selected one of the plurality of slogans (17).

4. A mailing system as claimed in claim 4 wherein each record of the database (31) includes destination area data corresponding to the destination address (18) and wherein destination addresses are read from the database in groups, the destination addresses of each group respectively corresponding to a single destination area.

5. A mailing system including a franking machine (20); said franking machine including printing means (26) for printing on mail items (10); accounting means (21) for carrying out accounting and control functions for maintaining accounting records relating to use of the franking machine in franking mail items; input means (22) to input a required postage charge to the accounting means (21); first means (27) for storing first print data defining an invariable part of a franking impression to be printed; characterised by a database of records (31) of destination addresses and corresponding destination areas; means to read out destination addresses from records hav-

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ing a selected one of said destination areas; said accounting means being operative in a franking operation to read out from said first means said first print data and to control said printing means (26) to print a franking impression comprising said invariable part (12, 13, 15) and at least the required value of postage charge (14) input by said input means and further being operative in the franking operation to receive the destination addresses read out from the records of the database (31) and to print said destination addresses (18) on said mail items (10).

6. A mailing system comprising a franking machine (20); said franking machine including printing means (26) for printing on mail items (10); accounting means (21) for carrying out accounting and control functions for maintaining accounting records relating to use of the franking machine in franking mail items; input means (22) to input a required postage charge to the accounting means; first means (27) for storing first print data defining an invariable part (12, 13, 15) of a franking impression to be printed; characterised by second means (28) storing a plurality of sets of second print data respectively defining a plurality of slogans (17) to be printed; means operable in response to a slogan select signal to select one of said sets of second print data defining a selected one of said slogans; and a database (31) of destination address records, each record including a destination address and an associated slogan select signal; means to read out a selected one of said destination address records and to input said destination address and slogan select signal to said franking machine (20); said accounting means (21) being operative in a franking operation to read out from said first means (27) said first print data, read out the selected set of second print data defining a selected one of said plurality of slogans (17) and to control said printing means (26) to print a franking impression comprising said invariable part (12, 13, 15) and at least the required value (14) of postage charge input by said input means (2) and to print said destination address input from said database (31) and the selected slogan (17).

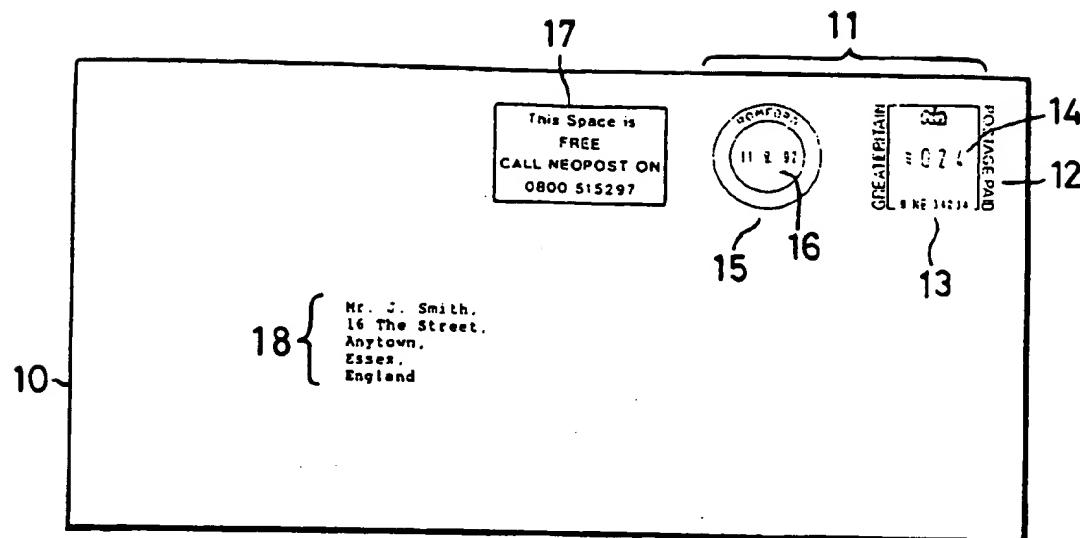


FIG. 1.

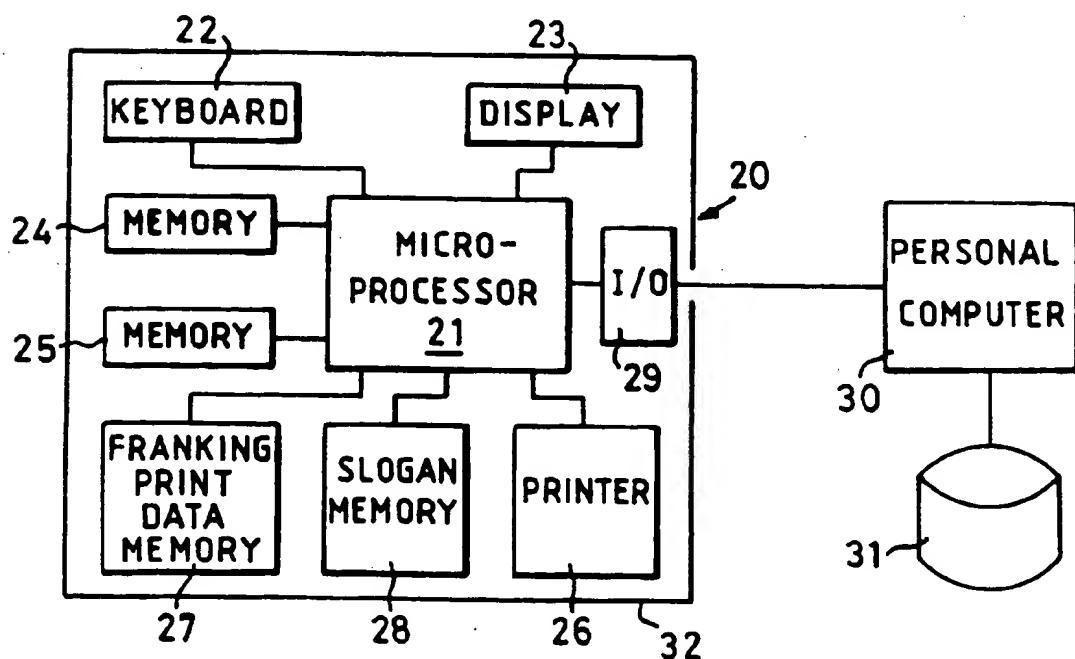


FIG. 2.

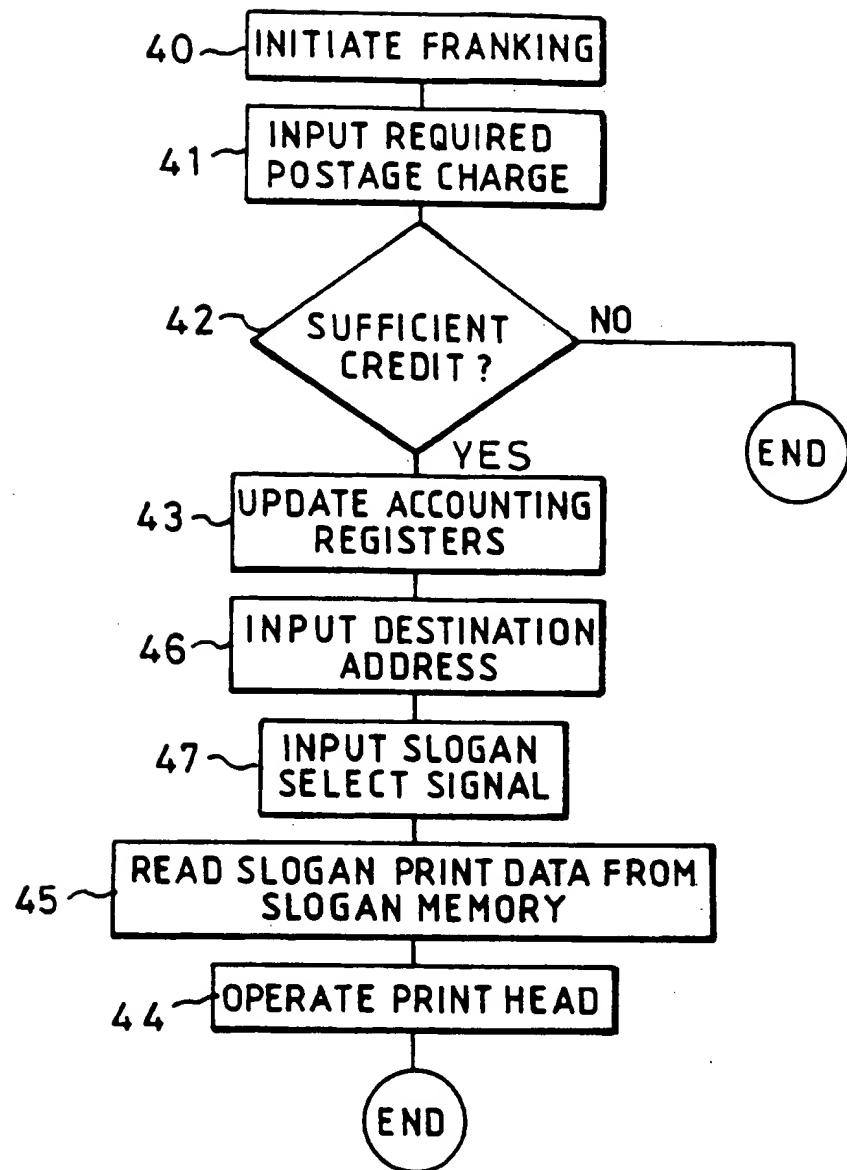


FIG.3.

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